

# COUNTY OF SAN DIEGO EMERGENCY MEDICAL SERVICES



## SAN DIEGO COUNTY TRAUMA SYSTEM REPORT

# 2014

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Emergency Medical Services

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Chief  
Emergency Medical Services



# COUNTY OF SAN DIEGO EMERGENCY MEDICAL SERVICES

## 2014 TRAUMA SYSTEM REPORT

### San Diego County Facts

**Population** - 3,194,362

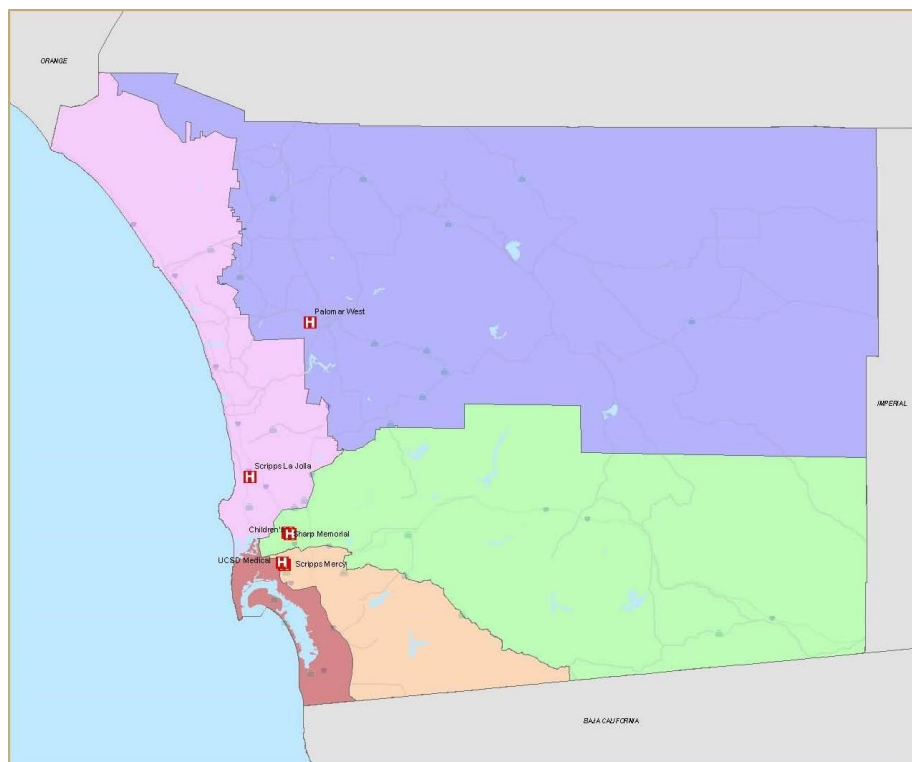
**Square Miles** - Over 4,200

### Adult Trauma Centers

- Scripps Mercy Hospital
- Palomar Medical Center
- Scripps Memorial Hospital
- Sharp Memorial Hospital
- UCSD Medical Center

### Pediatric Trauma Center

- Rady Children's Hospital



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# San Diego County Trauma System Report, 2014

## Introduction and *Live Well San Diego*

### Introduction

In October 1983, with support and direction from the San Diego County Board of Supervisors, the Department of Health Services created an Ad Hoc Trauma Advisory Task Force to assist in the review and evaluation of the Hospital Council – Medical Society Trauma Plan. The advisory group of outside trauma experts conducted public hearings and informal sessions with hospital and prehospital trauma providers, and synthesized the experiences of other trauma systems into a single set of recommendations for the Department and the Board of Supervisors to consider. The recommendations urged the County to adopt trauma standards that closely approximated the American College of Surgeons' guidelines. The community consensus that emerged from their effort resulted in the formal adoption of their recommendations by the County Board of Supervisors in November 1983.

Once the trauma standards were adopted, the Department implemented a competitive selection process, seeking to designate five adult trauma centers and one pediatric trauma center. Designation criteria were incorporated in a Request for Proposal and the Ad Hoc Trauma Advisory Task Force became the Proposal Review Committee to evaluate and recommend hospitals for designation. Six facilities were awarded provisional designation status based on the quality of trauma services provided.

On August 1, 1984, after 16 months of direct preparation, major trauma victims in San Diego County began bypassing community hospitals in favor of designated trauma centers.

The purpose of this annual report is to describe the San Diego County Trauma System with regards to various aspects of data, including patient volume, patient demographics, mechanisms of injury, and patient outcomes.

### *Live Well San Diego* and Trauma

*Live Well San Diego* is a regional vision adopted by the San Diego County Board of Supervisors in 2010 that aligns the efforts of County government, community partners and individuals to help all San Diego County residents be healthy, safe, and thriving. The vision includes three components. *Building Better Health*, adopted on July 13, 2010, focuses on improving the health of residents and supporting healthy choices; *Living Safely*, adopted on October 9, 2012, focuses on protecting residents from crime and abuse, making neighborhoods safe, and supporting resilient communities; and, *Thriving*, adopted on October 21, 2014, focuses on cultivating opportunities for all people to grow, connect and enjoy the highest quality of life.

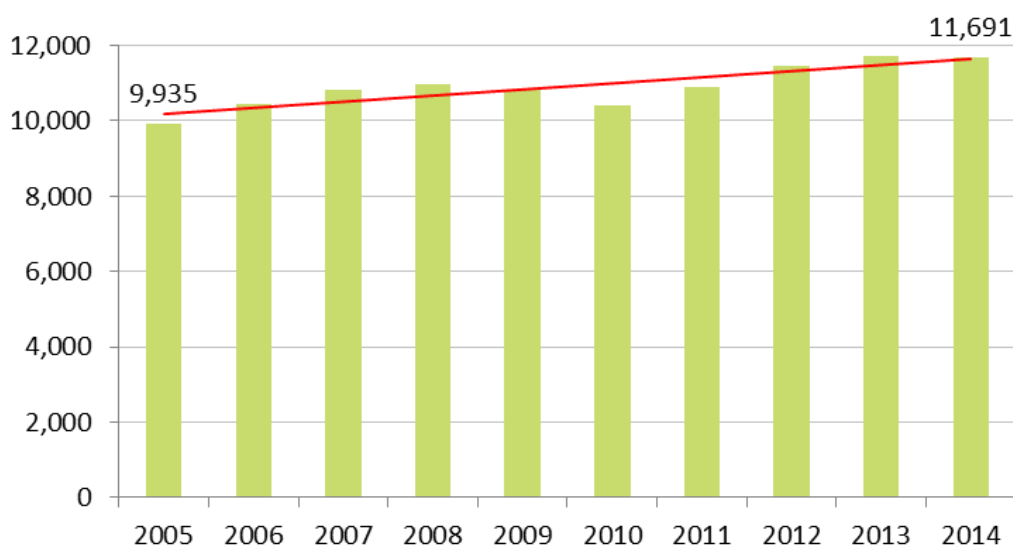
Healthcare and services organizations are working together to improve access and quality of care for local residents. Healthcare providers are implementing innovative strategies to reduce hospital readmissions for our most vulnerable populations and integrating behavioral health services into primary care to improve patient outcomes and reduce the stigma of mental illness. They are also adopting workplace wellness practices to achieve a healthy bottom line for our region. Services organizations are working with the County to implement nutrition education programs for low income families and to help families navigate through complex systems to gain access to needed services.

This San Diego County Trauma System Report contributes to the *Live Well San Diego* vision by reporting the incidence of traumatic injuries with the goal of injury and violence prevention in support of a healthy, safe and thriving region.

# San Diego County Trauma System Report, 2014

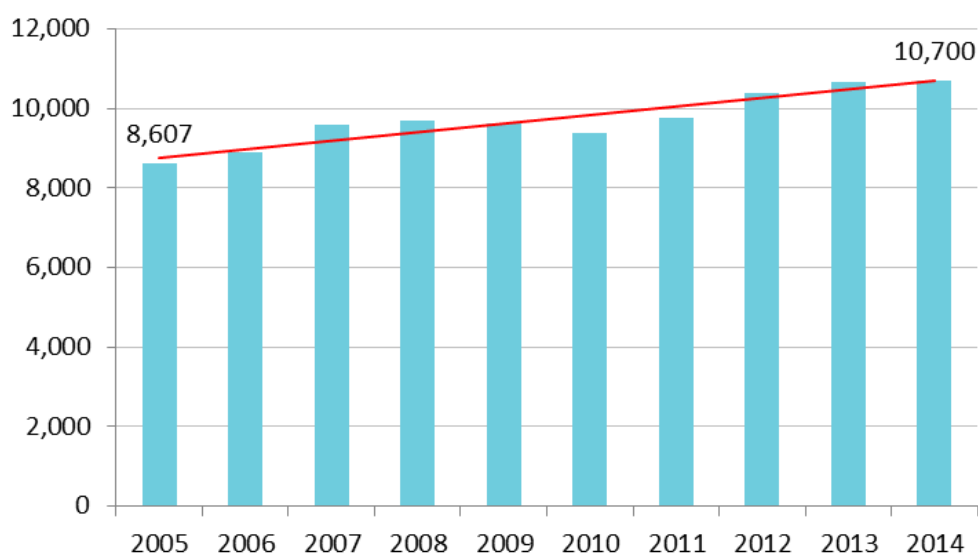
## Trauma System Overview Patient Volume

### A Decade of Trauma Volume



Over the last decade the San Diego County Trauma System has witnessed a 17.7% increase in total trauma volume and an 24.3% increase in trauma volume at the adult trauma centers. Over that same time period, the County of San Diego has experienced a 7.7% increase in population.

### Trauma Volume, Adult Trauma Centers



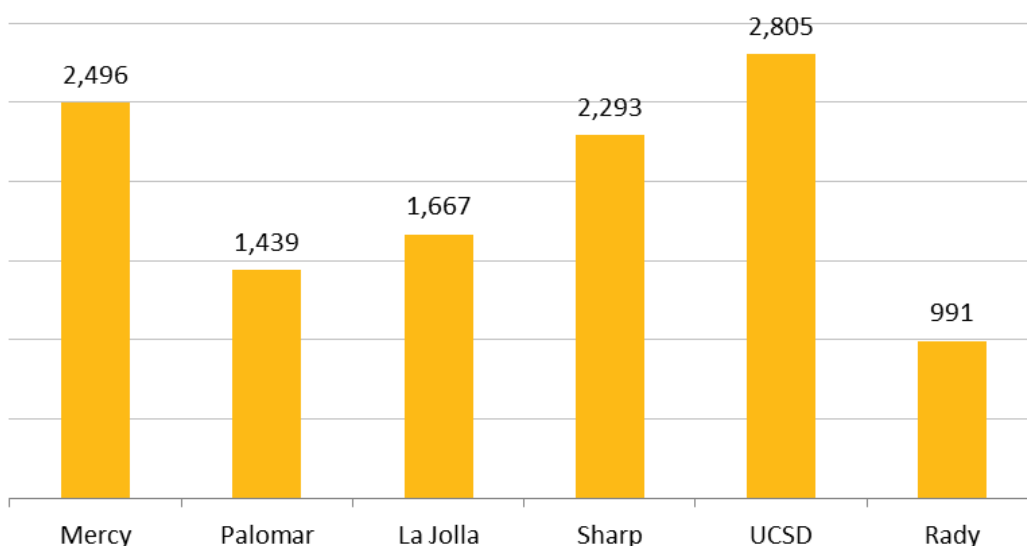
Source of all data: County of San Diego, Health and Human Services Agency, Emergency Medical Services, Trauma Registry, 2014.

# San Diego County Trauma System Report, 2014

## Trauma System Overview Patient Volume

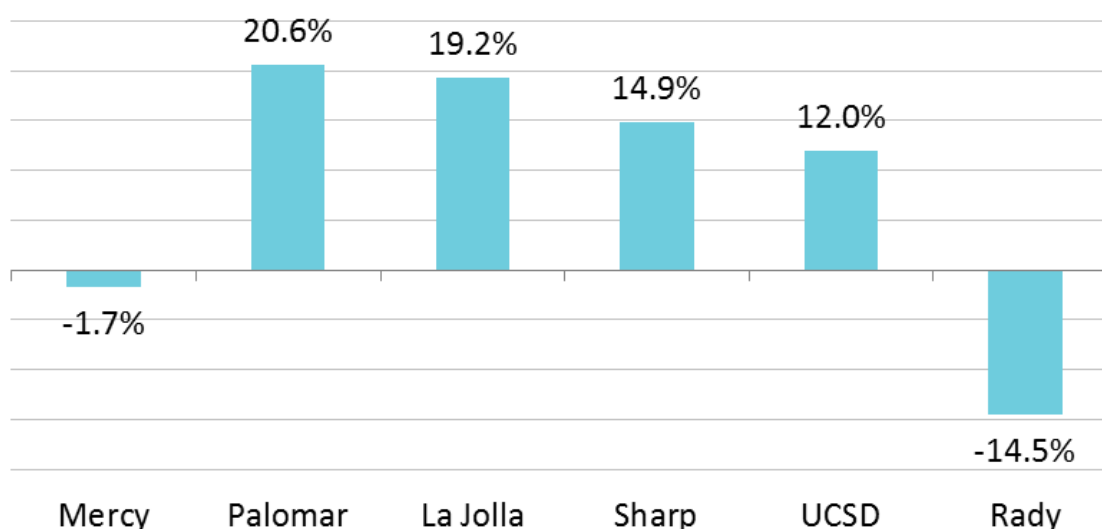
In 2014, there were 11,691 total patients treated in the San Diego County Trauma System, with all adult centers except Scripps Mercy experiencing annual volume growth compared to 2013.

**Total Trauma Volume by Trauma Center, 2014**



Most adult trauma centers experienced a five-year increase in total volume, with Palomar having the largest increase and Scripps Mercy having a similar volume compared to five years ago. However, Rady Children's experienced a 14.5% decrease in trauma volume over the last five years.

**Five Year Change in Trauma Volume, 2009-2014**



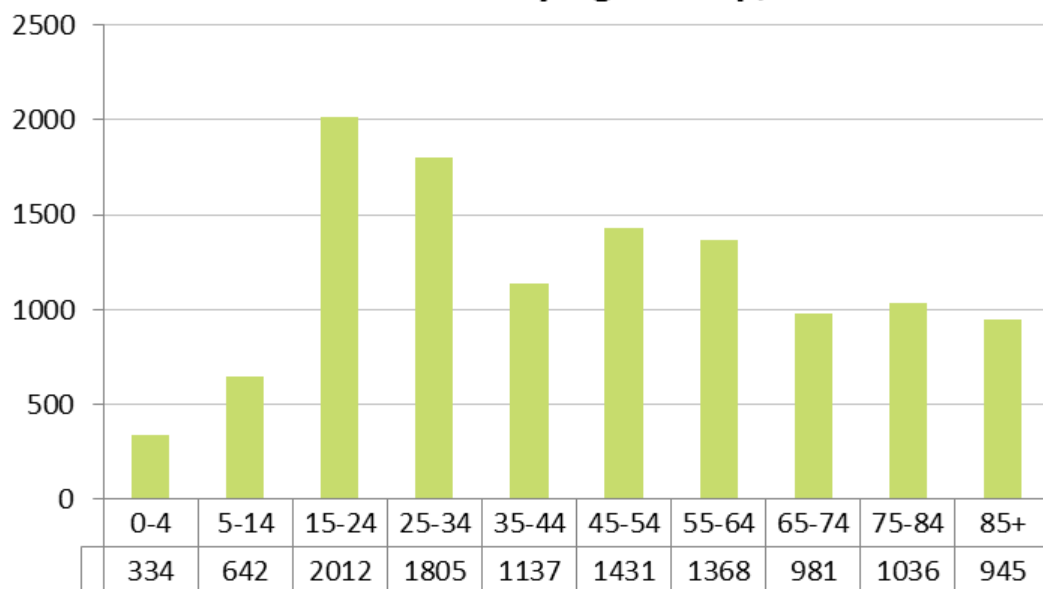
Source of all data: County of San Diego, Health and Human Services Agency, Emergency Medical Services, Trauma Registry, 2014.

# San Diego County Trauma System Report, 2014

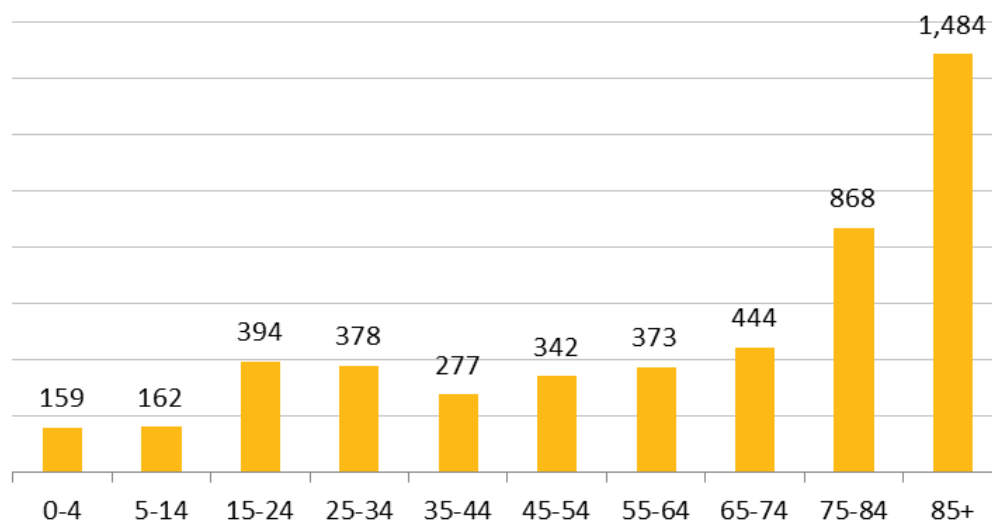
## Trauma System Overview Patient Volume—Age Groups

**Trauma Patients by Age Group, 2014**

In 2014,  
54.6% of  
trauma  
patients  
were  
aged 15  
to 54  
years.



**Trauma Patient Rate\* by Age Group**



\*Rate per 100,000 people.

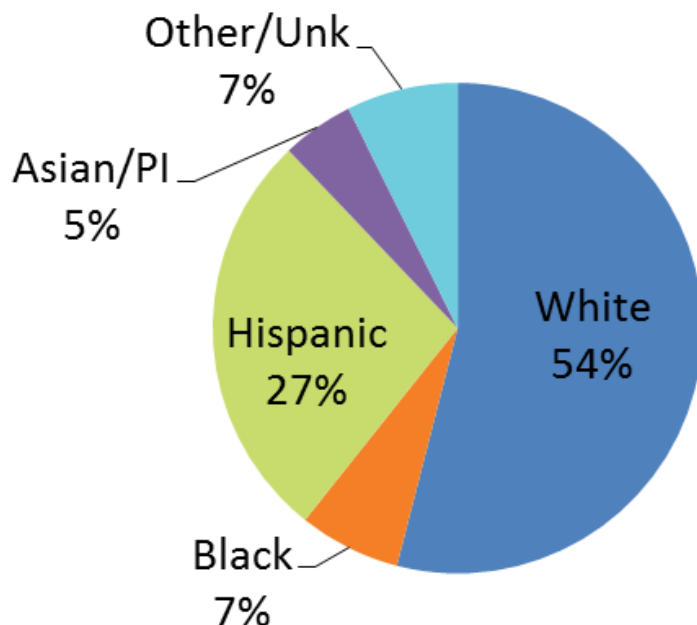
Although the majority of injuries occur in younger age groups, those 85 years and older are at a much higher risk of traumatic injury compared to other age groups.

Source of all data: County of San Diego, Health and Human Services Agency, Emergency Medical Services, Trauma Registry, 2014.

# San Diego County Trauma System Report, 2014

## Trauma System Overview Patient Volume—Race/Ethnicity

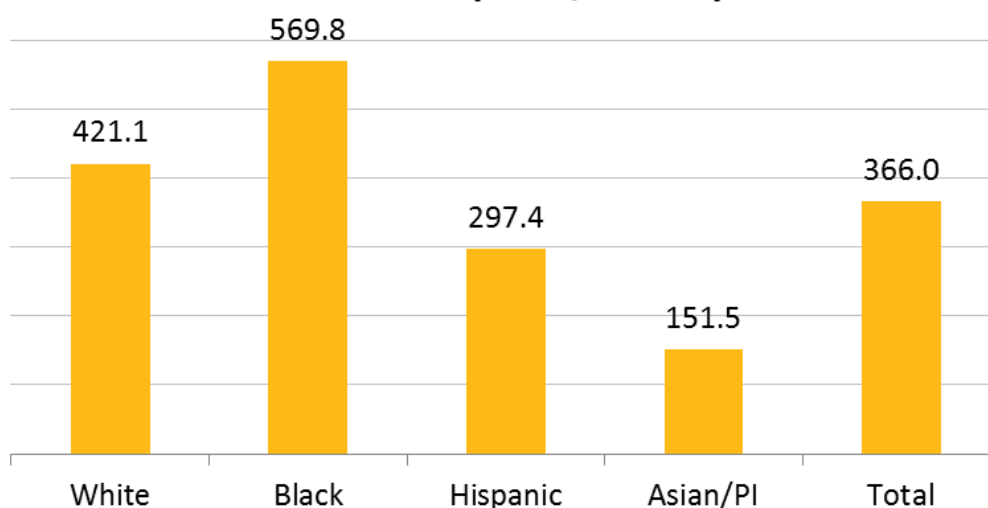
### Trauma Patients by Race/Ethnicity Percent



In 2014, 54% of trauma patients were white, with Hispanics (27%) making up the next largest race/ethnicity.

In 2014, Asians/Pacific Islanders had the lowest rate of traumatic injury at about 152 per 100,000.

### Trauma Patients by Race/Ethnicity Rate\*



\*Rate per 100,000 people.

While blacks are at higher risk of traumatic injury compared to other race/ethnicities, the rate among blacks actually decreased by 13% from 2013 (645.1).

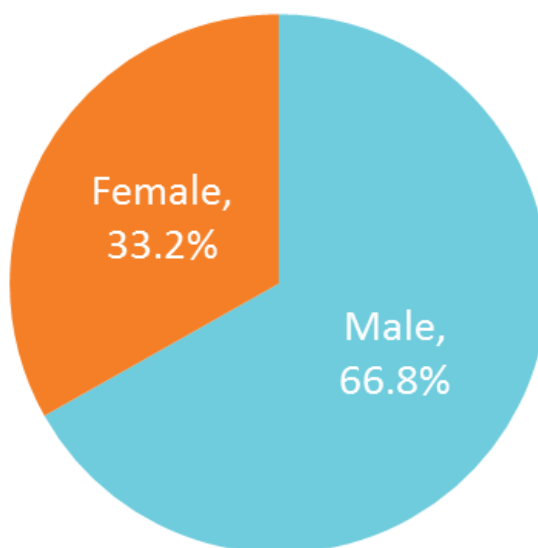
Source of all data: County of San Diego, Health and Human Services Agency, Emergency Medical Services, Trauma Registry, 2014.

# San Diego County Trauma System Report, 2014

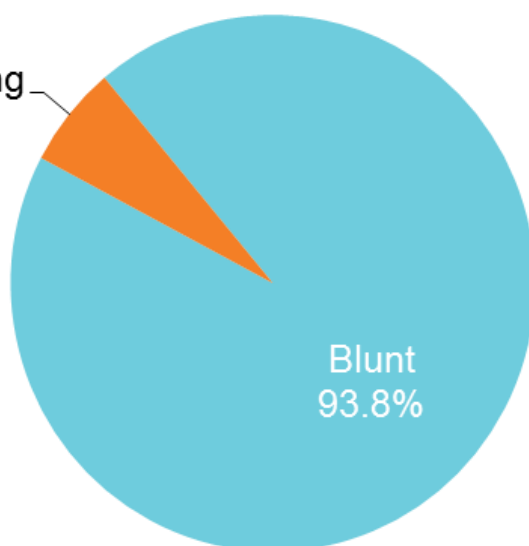
## Trauma System Overview Patient Volume—Gender and Injury Type

### Percent of Trauma Patients by Gender, 2014

In 2014, male trauma patients outnumbered females by about two to one. This has been a consistent trend for many years.



Penetrating  
6.2%



Similar to previous years, patients with blunt injuries outnumbered those with penetrating injuries by more than ten to one.

Source of all data: County of San Diego, Health and Human Services Agency, Emergency Medical Services, Trauma Registry, 2014.

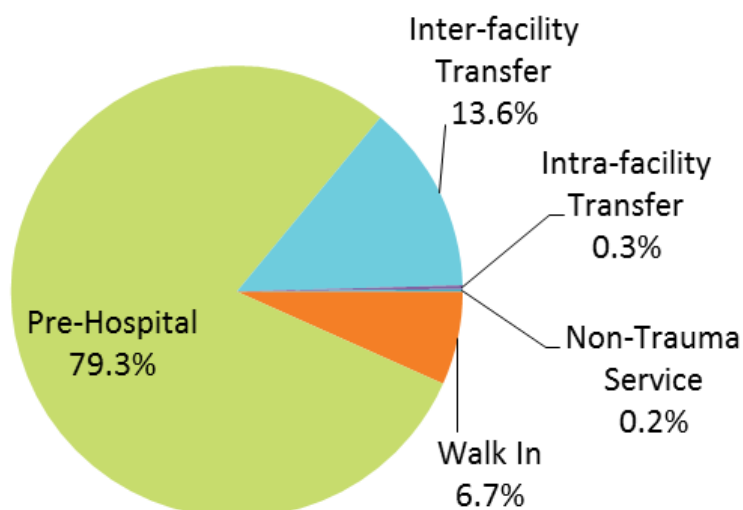


# San Diego County Trauma System Report, 2014

## Trauma System Overview Patient Volume—System Access and Discharge Month

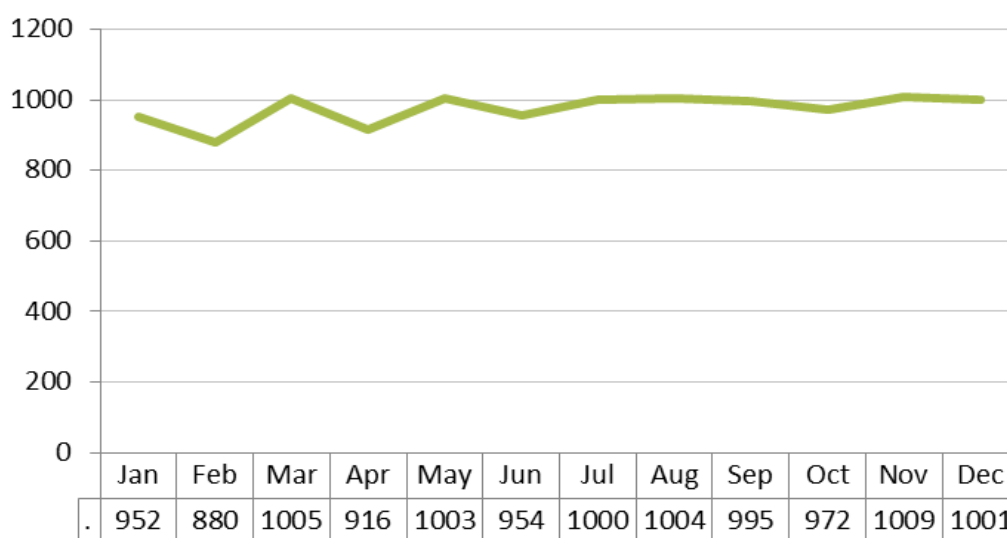
### Trauma Patients by Method of System Access

In 2014, there were 9,271 patients delivered to trauma centers by pre-hospital, 1,586 inter-facility transfers, and 781 walk-ins. The number of walk-ins represents a 28% decrease, compared to 2013.



In 2014, the San Diego County Trauma System did not experience the usual surge in patient volume during the summer months, as seen in previous years.

### Trauma Patients by Discharge Month, 2014

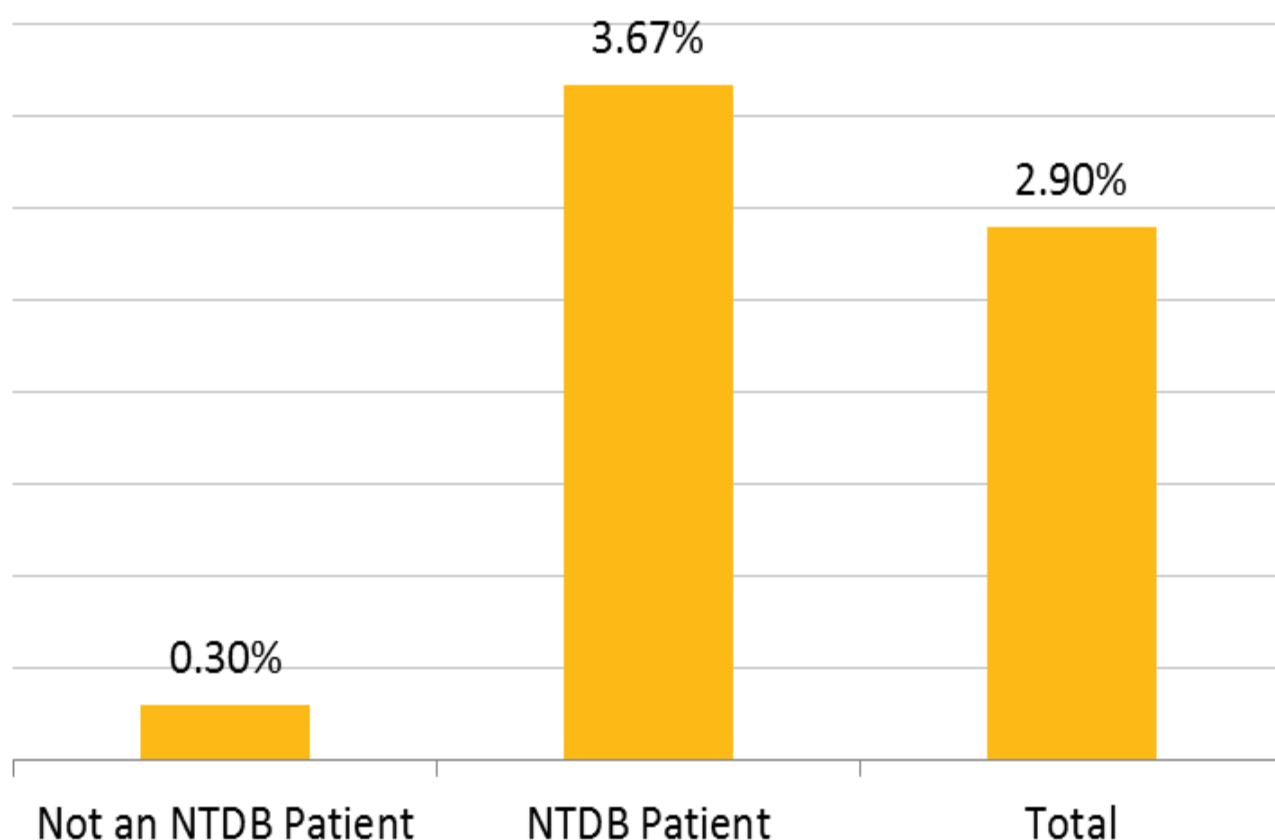


Source of all data: County of San Diego, Health and Human Services Agency, Emergency Medical Services, Trauma Registry, 2014.

# San Diego County Trauma System Report, 2014

## Trauma System Overview Mortality Rates

In 2014, the overall mortality rate of the San Diego County Trauma System was 2.9%. For those patients who qualified for the National Trauma Data Bank, the mortality rate was 3.7%.



NTDB: National Trauma Data Bank. Some patients treated at San Diego County Trauma Centers do not meet criteria for NTDB inclusion.

Note: Mortality rates are calculated using traumatic deaths that were treated at trauma centers. For a more complete report on traumatic deaths in San Diego County, including those dead on scene, please refer to the San Diego County Medical Examiner Annual Report available at: [www.sandiegocounty.gov/me/](http://www.sandiegocounty.gov/me/).

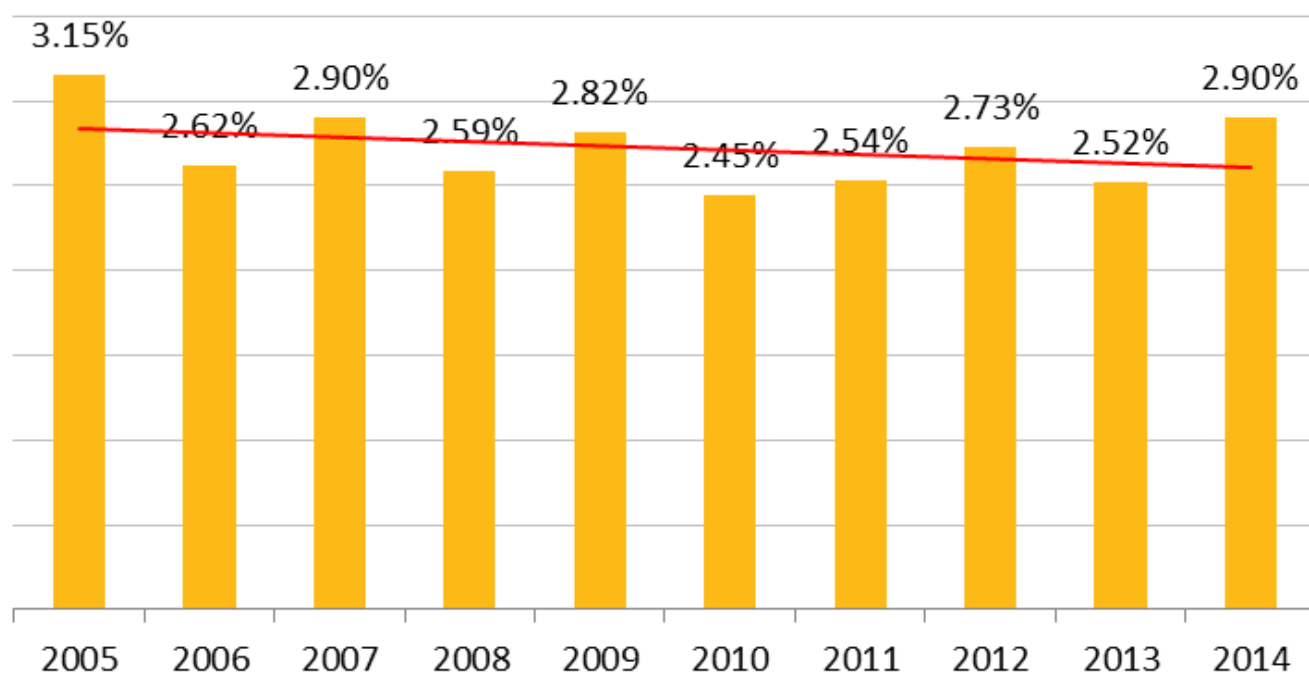
Source of all data: County of San Diego, Health and Human Services Agency, Emergency Medical Services, Trauma Registry, 2014.

# San Diego County Trauma System Report, 2014

## Trauma System Overview Mortality Rate Trends

Mortality rates have continually decreased throughout the 30-year life of the San Diego County Trauma System. While mortality rates continue to trend lower, the 2014 mortality rate represents the highest mark in seven years.

### Mortality Rates, 2005 - 2014



Source of all data: County of San Diego, Health and Human Services Agency, Emergency Medical Services, Trauma Registry, 2014.

# San Diego County Trauma System Report, 2014

## Mechanism of Injury—Age Groups

Top Five Trauma Mechanisms by Age Group					
Age	1	2	3	4	5
0 - 4	Falls	MV Traffic	Pedestrian	Struck By	Oth Trans
	200	51	20	19	3
5 - 14	Falls	Struck By	MV Traffic	Pedalcycle	Pedestrian
	230	97	91	62	58
15 - 24	MV Traffic	Falls	Struck By	Motorcycle	Stabbing
	501	337	288	259	165
25 - 34	MV Traffic	Motorcycle	Falls	Struck By	Stabbing
	434	288	286	248	141
35 - 44	Falls	MV Traffic	Struck By	Motorcycle	Stabbing
	286	237	135	125	72
45 - 54	Falls	MV Traffic	Struck By	Pedalcycle	Motorcycle
	440	251	165	135	132
55 - 64	Falls	MV Traffic	Pedalcycle	Motorcycle	Pedestrian
	600	204	114	101	85
65 - 74	Falls	MV Traffic	Pedestrian	Oth Trans	Pedalcycle
	611	142	46	40	39
75 - 84	Falls	MV Traffic	Pedestrian	Oth Trans	Motorcycle
	803	109	39	24	12
85+	Falls	MV Traffic	Pedestrian	Struck By	Oth Trans
	834	55	13	10	9
Total	Falls	MV Traffic	Struck By	Motorcycle	Pedalcycle
	4627	2075	1066	994	643

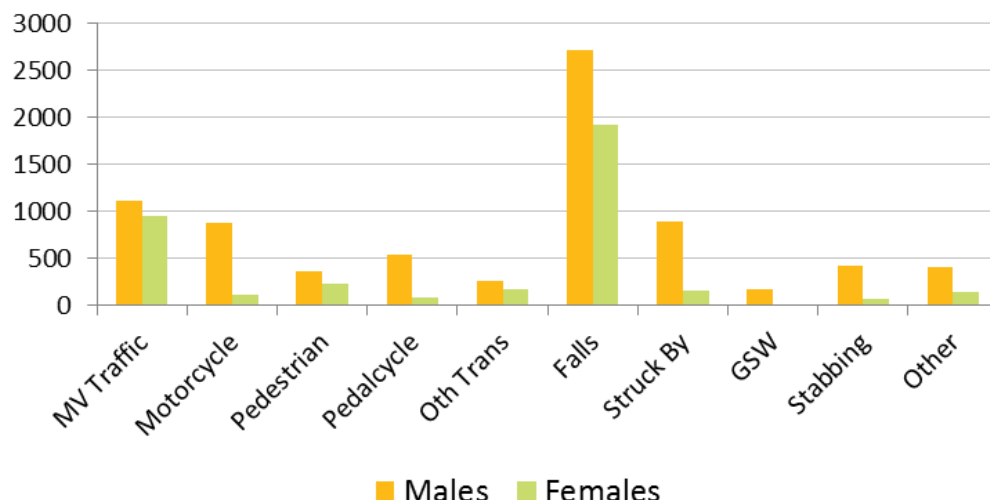
In 2014, falls accounted for 39.6% of all causes of injury in the San Diego County Trauma System. Additionally, falls are the number one cause of injury in each age group, other than those aged 15 to 34 years.

Source of all data: County of San Diego, Health and Human Services Agency, Emergency Medical Services, Trauma Registry, 2014.

# San Diego County Trauma System Report, 2014

## Mechanism of Injury—Gender and Race/Ethnicity

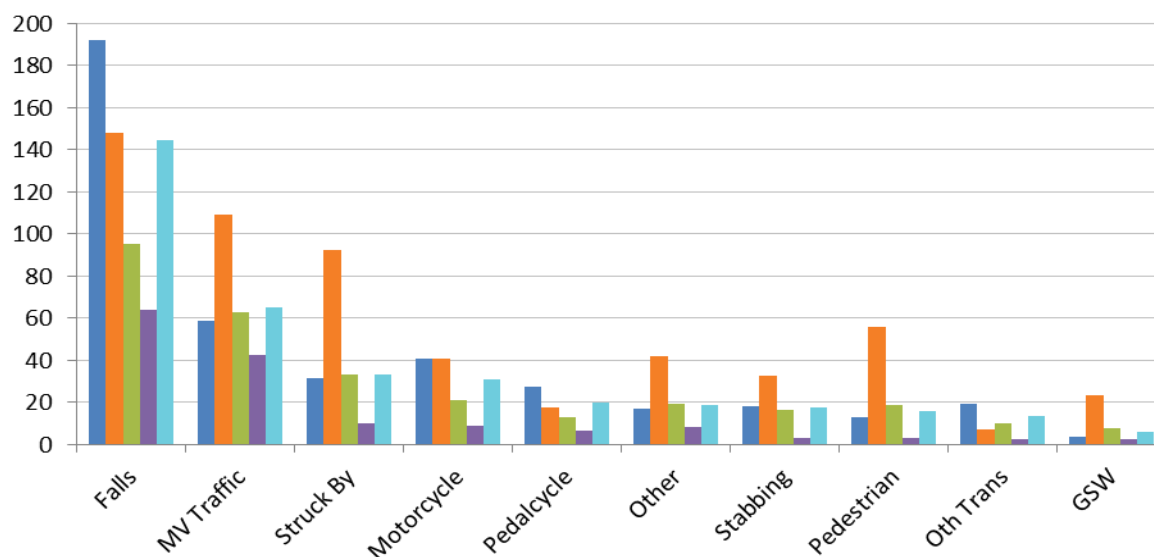
### Mechanism of Injury by Gender, 2014



Other than motor vehicle traffic injuries, males greatly exceeded females in all other causes of injury. The largest differences occurred in motorcycle, pedalcycle, struck by, gunshot, and stabbing injuries.

While whites had the highest risk of fall-related and pedalcycle injuries, whites and blacks shared the highest rate for motorcycle injuries, and blacks alone had the highest rate of motor vehicle, struck by, stabbing, pedestrian, and gun shot injuries. Asians and Pacific Islanders had a very low rate of fall-related injuries and other mechanisms in general.

### Mechanism of Injury Rate\* by Race/Ethnicity, 2014



\*Rate per 100,000 people. ■ White ■ Black ■ Hispanic ■ Asian/PI ■ Total

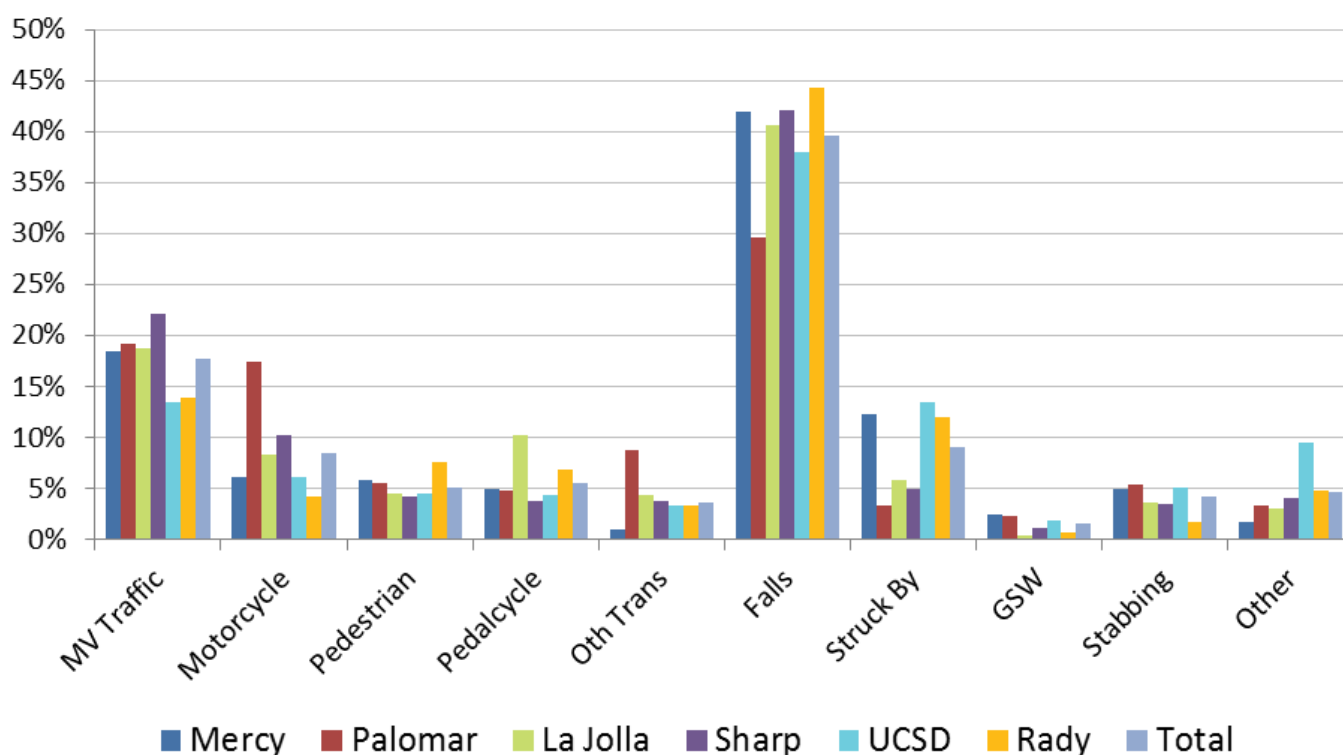
Source of all data: County of San Diego, Health and Human Services Agency, Emergency Medical Services, Trauma Registry, 2014.

# San Diego County Trauma System Report, 2014

## Mechanism of Injury—Trauma Centers

In 2014, 18% of Palomar Medical Center's traumatic injuries were from motorcycle accidents, which was much higher than any other trauma center. At 7.6%, Rady Children's experienced a higher percent of pedestrian injuries than other centers, and Scripps La Jolla had the highest rate of pedalcycle injuries. Sharp Memorial had the highest percent of motor vehicle injuries and UCSD had the highest percent of 'struck by' injuries.

**Percent of Injuries by Trauma Center and Mechanism, 2014**

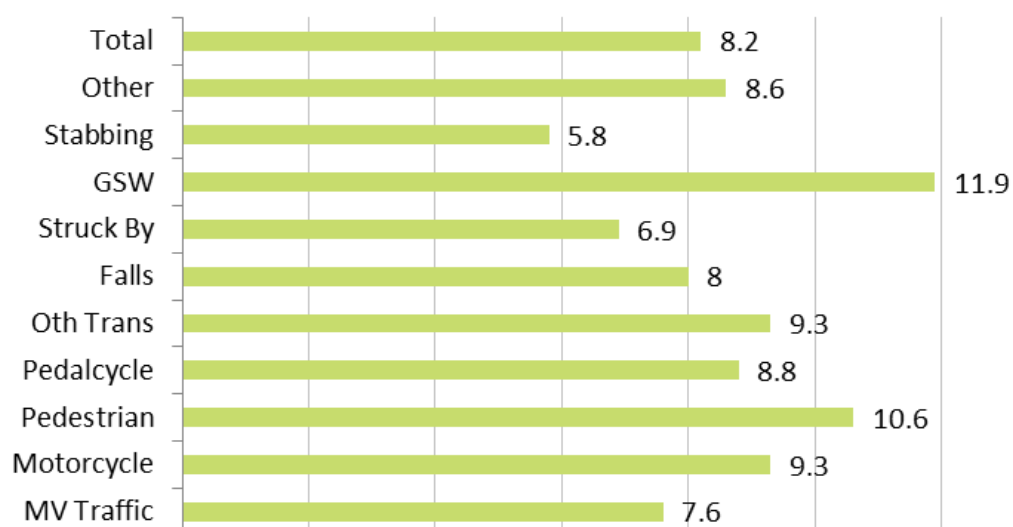


Source of all data: County of San Diego, Health and Human Services Agency, Emergency Medical Services, Trauma Registry, 2014.

# San Diego County Trauma System Report, 2014

## Mechanism of Injury—Injury Severity and Length of Stay

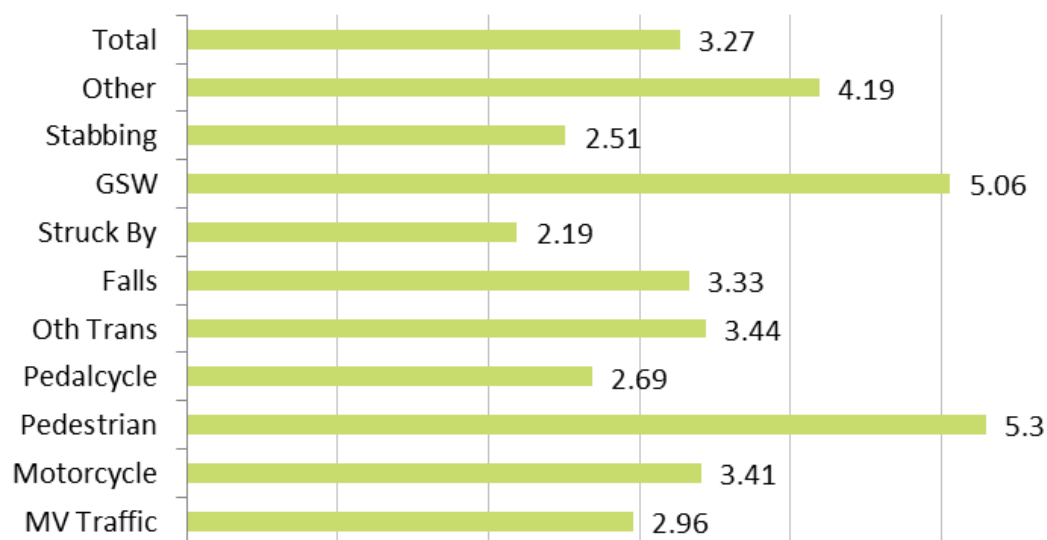
### Mechanism of Injury by Mean ISS\*



Gunshot injuries were the most severe injuries with pedestrian injuries the second most severe. Stabbing, motor vehicle traffic, and struck by injuries were among the least severe mechanisms of injury.

\*ISS: Injury Severity Score.

### Mechanism of Injury by Mean Length of Stay



Being the most severe, pedestrian and gunshot injuries also led to the longest lengths of stay. The shortest lengths of stay were from struck by, stabbing, and pedalcycle injuries. The overall mean length of stay was 3.27 days.

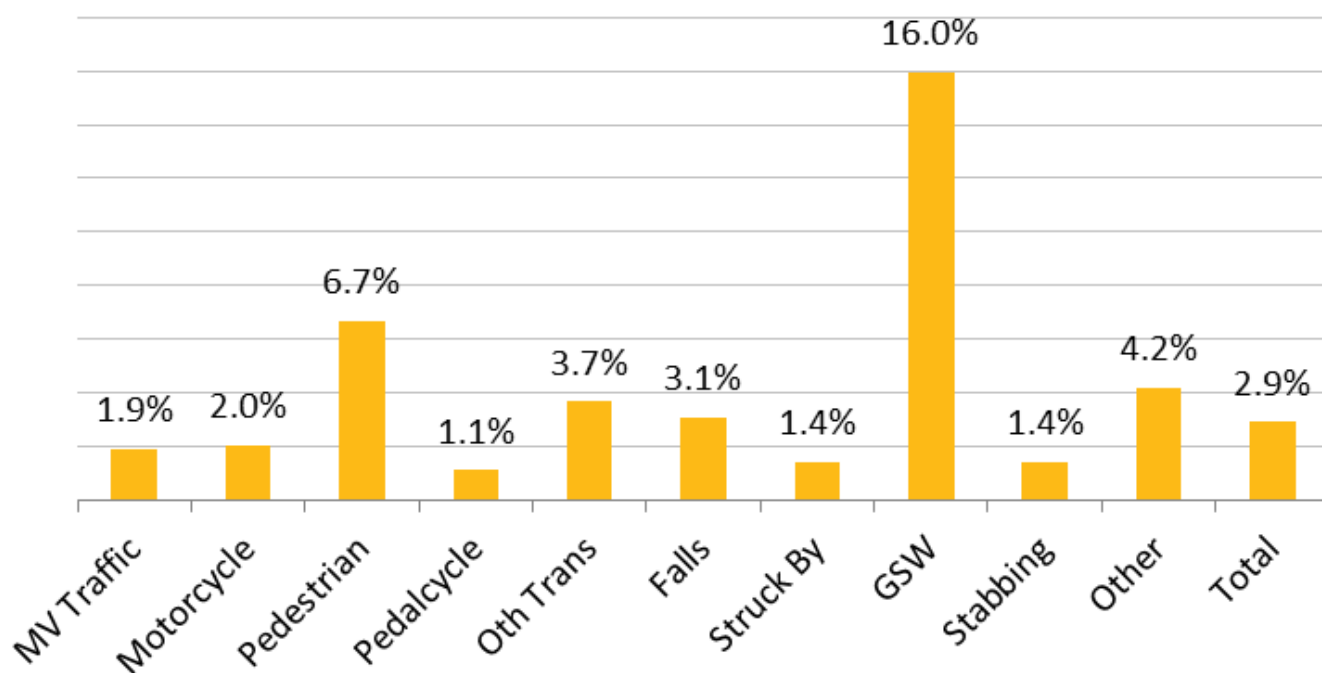
Source of all data: County of San Diego, Health and Human Services Agency, Emergency Medical Services, Trauma Registry, 2014.

# San Diego County Trauma System Report, 2014

## Mechanism of Injury—Mortality Rates

In 2014, mortality rates differed greatly by mechanism of injury. Sixteen percent of gunshot victims that made it to a trauma center did not survive their injuries. Conversely, only one in 90 pedalcycle patients died. About one in 32 fall-related injury patients died. This is an important number to track as fall-related injuries continue to increase in San Diego County. The fall-related mortality rate was 2.5% in 2012 and 2.9% in 2013.

### Mortality Rate by Mechanism of Injury, 2014



Note: Mortality rates are calculated using traumatic deaths that were treated at trauma centers. For a more complete report on traumatic deaths in San Diego County, including those dead on scene, please refer to the San Diego County Medical Examiner Annual Report available at: [www.sandiegocounty.gov/me/](http://www.sandiegocounty.gov/me/).

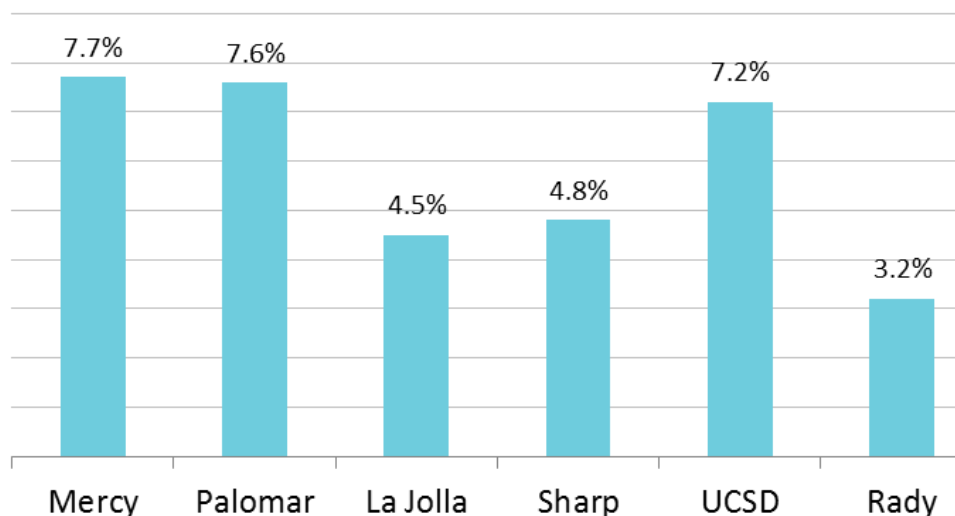
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# San Diego County Trauma System Report, 2014

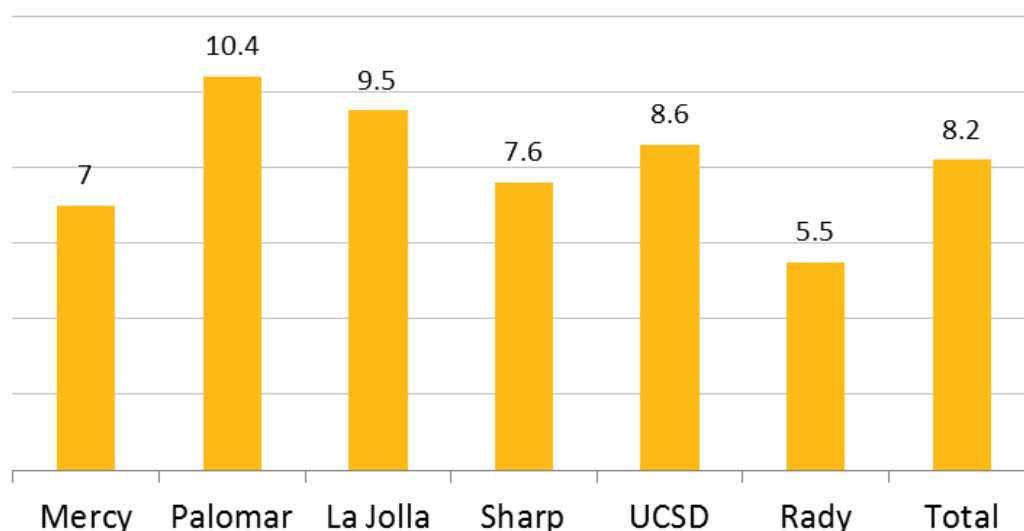
## Injury Type and ISS by Trauma Center

### Percent Penetrating by Trauma Center, 2014



Mercy, Palomar, and UCSD had the highest percent of penetrating injuries. Palomar (22%) and Sharp (48%) experienced substantial annual decreases in their proportion of penetrating injuries. Of the adult centers, Scripps La Jolla and Sharp had the lowest percent of penetrating injuries, while Rady Children's had the lowest overall.

### Mean ISS\* by Trauma Center, 2014



Among the adult trauma centers, Palomar had the highest mean ISS with Scripps Mercy having the lowest. Rady Children's had the lowest overall mean ISS.

\*ISS: Injury Severity Score.

Source of all data: County of San Diego, Health and Human Services Agency, Emergency Medical Services, Trauma Registry, 2014.

# San Diego County Trauma System Report, 2014

## Directory

### EMS AGENCY

**6255 Mission Gorge Road, San Diego, CA. 92120 - (619) 285-6429**

**Chief:** Marcy Metz, RN

**Medical Director:** Bruce Haynes, MD

**QA Specialist – Trauma:** Candy Schoenheit, RN, BSN, PHN, MICN

### RADY CHILDREN'S HOSPITAL SAN DIEGO

**3020 Childrens Way, San Diego, CA 92123 - (858) 576-1700**

**Hospital Administrator:** Donald Kearns, MD, CEO

**Trauma Administrator:** Nicholas Holmes, MD, MBA, SVP/COO

**Trauma Medical Director:** Mary Hilfiker, MD, PhD, MMM

**Trauma Program Manager:** Renee Douglas, RN, MSN, PHN, CPEN

### SCRIPPS MERCY HOSPITAL

**4077 Fifth Avenue, San Diego, CA 92103 - (619) 294-8111**

**Hospital Administrator:** Tom Gammieri

**Trauma Administrator:** Lisa Schafer, CONE

**Trauma Medical Director:** Michael J. Sise, MD, FACS

**Trauma Program Manager:** Brian McCord, RN, MSN

**Base Hospital Medical Director:** Marcus Wang, MD

**Base Hospital Nurse Coordinator:** Darlene Bourdon, RN

### PALOMAR MEDICAL CENTER

**2185 Citracado Parkway, CA 92029 - (442) 281-5000**

**Hospital Administrator:** Gerald Bracht

**Trauma Administrator:** Joy Gorzeman

**Trauma Medical Director:** John Steele, MD

**Trauma Program Manager:** Melinda Case, RN

**Base Hospital Medical Director:** Michelle Grad, MD

**Base Hospital Nurse Coordinator:** Cheryl Graydon, RN, MICN

## Directory

### **SCRIPPS MEMORIAL HOSPITAL, LA JOLLA**

**9888 Genesee Avenue, La Jolla, CA 92037 - (858) 457-4123**

**Hospital Administrator:** Gary Fybel

**Trauma Administrator:** Cynthia Steckel, PhD, RN, MSN,

**Trauma Medical Director:** Imad Dandan, MD

**Trauma Program Manager:** Melanie Gawlik, RN, MSN

**Base Hospital Medical Director:** Chris Wiesner, MD

**Base Hospital Nurse Coordinator:** Chris Wells, RN

### **SHARP MEMORIAL HOSPITAL**

**7901 Frost Street, San Diego, CA 92123 - (858) 541-3400**

**Hospital Administrator:** Janie Kramer

**Trauma Administrator:** Christopher Walker

**Trauma Medical Director:** Frank Kennedy, MD, FACS

**Trauma Program Manager:** Kathi Ayers, RN, MSN

**Base Hospital Medical Director:** Saul Levine, MD

**Base Hospital Nurse Coordinator:** Linda Rosenberg, RN

### **UNIVERSITY OF CALIFORNIA, SAN DIEGO MEDICAL CENTER**

**200 West Arbor Drive, San Diego, CA 92103 - (619) 543-6222**

**Hospital Administrator:** Paul Viviano, CEO

**Trauma Administrator:** Margarita Baggett

**Trauma Medical Director:** Raul Coimbra, MD, PhD, FACS

**Trauma Program Manager (Interim):** Patricia Stout, RN

**Base Hospital Medical Director:** Chris Kahn, MD

**Base Hospital Nurse Coordinator:** Melody Dotson, RN, MICN